

CLAIMS

- 1 1. An integrated circuit, comprising:
2 a lead frame having a plurality of leads;
3 a current conductor portion comprising a coupling of at least two of the plurality of leads;
4 a substrate having a first surface proximate to said current conductor portion and a second
5 surface distal from said current conductor portion; and
6 one or more magnetic field transducers disposed on the first surface of said substrate.
- 1 2. The integrated circuit of Claim 1, wherein said substrate is disposed having the first
2 surface of said substrate above said current conductor portion and the second surface above the
3 first surface.
- 1 3. The integrated circuit of Claim 1, wherein said substrate is disposed having the first
2 surface of said substrate below said current conductor portion and the second surface below the
3 first surface.
- 1 4. The integrated circuit of Claim 1, wherein said current conductor portion further
2 comprises a conductive clip coupled to the at least two of the plurality of leads.
- 1 5. The integrated circuit of Claim 4, wherein said substrate is disposed having the first
2 surface of said substrate above said conductive clip and the second surface of said substrate
3 above the first surface.
- 1 6. The integrated circuit of Claim 4, wherein said substrate is disposed having the first
2 surface of said substrate below said conductive clip and the second surface below the first
3 surface.
- 1 7. The integrated circuit of Claim 4, wherein a thickness of the conductive clip is selected in
2 accordance with a current passing through the conductive clip.

1 8. The integrated circuit of Claim 1, wherein said substrate has at least one bonding pad
2 coupled to a corresponding one of the plurality of leads with a bond wire.

1 9. The integrated circuit of Claim 1, wherein said substrate is associated with a selected one
2 of a solder ball, a gold bump, a eutectic and high lead solder bump, a no-lead solder bump, a
3 gold stud bump, a polymeric conductive bump, an anisotropic conductive paste, and a conductive
4 film coupled to a corresponding one of the plurality of leads.

1 10. The integrated circuit of Claim 1, wherein the current conductor portion has a current
2 conductor portion axis and at least two of said one or more magnetic field transducers are
3 disposed on opposite sides of the current conductor portion axis.

1 11. The integrated circuit of Claim 1, wherein at least two of said one or more magnetic field
2 transducers are rotated relative to each other for providing predetermined voltage output
3 polarities.

1 12. The integrated circuit of Claim 1, wherein at least a portion of said current conductor
2 portion has a T-shaped cross section.

1 13. The integrated circuit of Claim 1, wherein at least a portion of said current conductor
2 portion has a rectangular cross section having a minimum dimension less than a thickness of said
3 lead frame.

1 14. The integrated circuit of Claim 1, further comprising at least one amplifier disposed on
2 said substrate.

1 15. The integrated circuit of Claim 14, wherein the at least one amplifier provides an output
2 signal proportional to a sum of signals generated by at least two of said one or more magnetic
3 field transducers.

1 16. The integrated circuit of Claim 14, wherein the at least one amplifier forms a summing
2 arrangement coupled to four of said one or more magnetic field transducers.

1 17. The integrated circuit of Claim 1, further comprising a flux concentrator disposed
2 proximate said one or more magnetic field transducers.

1 18. The integrated circuit of Claim 1, further comprising a flux concentrating layer disposed
2 proximate the second surface of said substrate.

1 19. A method of manufacturing an integrated circuit, comprising:
2 providing a lead frame having a plurality of leads of which at least two are coupled
3 together to form a current conductor portion; and
4 etching the current conductor portion to provide the current conductor portion with a
5 cross section having a predetermined shape.

1 20. The method of Claim 19, wherein the predetermined shape comprises a T shape.

1 21. The method of Claim 19, wherein the predetermined shape comprises a rectangular shape
2 having a minimum dimension less than a thickness of said lead frame.

1 22. The method of Claim 19, further comprising:
2 mounting a substrate proximate said lead frame, the substrate having a first surface
3 proximate to the current conductor portion and a second opposing surface disposed distal from
4 the current conductor portion, wherein one or more magnetic field transducers are disposed on
5 the first surface of the substrate.

1 23. The method of Claim 22, wherein the predetermined shape comprises a T shape.

1 24. The method of Claim 22, wherein the predetermined shape comprises a rectangular shape
2 having a minimum dimension less than a thickness of said lead frame.